Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-9. (canceled)

10. (currently amended) A method for providing substantially constant-voltage power for an electric distribution system using a matched reactance ~~machine~~ power generation system, the method comprising the steps of:

providing a permanent magnet rotor type machine having a selected BEMF value and a selected machine inductance value, wherein an excitation of said machine is fixed and achieved by at least one permanent magnet embedded in a rotor assembly of said machine;

selecting said BEMF value for said machine, wherein said BEMF value is selected at a first machine speed having a line-to-line peak voltage that is equal to a desired terminal voltage of said machine ~~at a first machine speed~~, said BEMF value having substantially equal amplitude to said desired terminal voltage at said first speed and wherein an electrical phase difference between said BEMF value and said terminal voltage is approximately zero;

selecting said machine inductance value for said machine, wherein said machine inductance value is selected based upon both a machine reactance value and a frequency value ~~which correspond to~~ as a function of a proportional increase in said selected BEMF value between said first machine speed and a second machine speed, wherein the terminal voltage and a phase current are in phase ; and

controlling said machine speed to provide a substantially constant terminal voltage for a variable power demand level.

11. (canceled)

12. (amended) A method for providing substantially constant-voltage power for an electric distribution system using a matched reactance ~~machine~~ power generation system as claimed in claim 10, further comprising the step of:

selecting said machine reactance value at said second speed from a vector diagram calculation for reactance including a machine terminal voltage vector and an internal machine voltage drop vector.

13. (new) A method for providing substantially constant-voltage power for an electric distribution system using a matched reactance power generation system as claimed in claim 10 wherein said first machine speed corresponds to a zero delivered power.

14. (new) A method for providing substantially constant-voltage power for an electric distribution system using a matched reactance power generation system as claimed in claim 10 wherein said second machine speed corresponds to a maximum delivered power.

15. (new) A method for providing substantially constant-voltage power for an electric distribution system using a matched reactance power generation system, the method comprising the steps of:

providing a permanent magnet rotor type machine having a selected BEMF value and a selected machine inductance value, wherein an excitation of said machine is fixed and achieved by at least one permanent magnet;

selecting said BEMF value for said machine, wherein said BEMF value is selected at a first machine speed having a line-to-line peak voltage that is equal to a desired terminal voltage of said machine, said BEMF value having substantially equal amplitude to said desired terminal voltage at said first speed and wherein an electrical phase difference between said BEMF value and said terminal voltage is approximately zero;

selecting said machine inductance value for said machine, wherein said machine inductance value is selected as a function of a proportional increase in said selected BEMF value between said first machine speed and a second machine speed, wherein said second machine speed corresponds to a maximum delivered power, wherein said terminal voltage and a phase current are in phase and a resistive component of the machine reactance is zero; and

controlling said machine speed to provide a substantially constant terminal voltage for a variable power demand level.

16. (new) A method for providing substantially constant-voltage power for an electric distribution system using a matched reactance power generation system as claimed in claim 15, wherein said machine inductance value is selected further based upon a machine reactance value and a frequency value.

17. (new) A method for providing substantially constant-voltage power for an electric distribution system using a matched reactance power generation system as claimed in claim 15 wherein said at least one permanent magnet is embedded in a rotor assembly of said permanent magnet rotor type machine.

18. (new) A method for providing substantially constant-voltage power for an electric distribution system using a matched reactance power

generation system as claimed in claim 15 wherein said first machine speed corresponds to a zero delivered power.

19. (new) A method for providing substantially constant-voltage power for an electric distribution system using a matched reactance power generation system as claimed in claim 15 wherein said second machine speed corresponds to a maximum delivered power.

20. (new) A method for providing substantially constant-voltage power for an electric distribution system using a matched reactance power generation system, the method comprising the steps of:

providing a permanent magnet rotor type machine having a selected BEMF value and a selected machine inductance value, wherein an excitation of said machine is fixed and achieved by at least one permanent magnet;

selecting said BEMF value for said machine, wherein said BEMF value is selected at a first machine speed having a line-to-line peak voltage that is equal to a desired terminal voltage of said machine, said BEMF value having substantially equal amplitude to said desired terminal voltage at said first speed, wherein an electrical phase difference between said BEMF value and said terminal voltage is approximately zero and said first machine speed corresponds to a zero delivered power;

selecting said machine inductance value for said machine, wherein said machine inductance value is selected as a function of a proportional increase in said selected BEMF value between said first machine speed and a second machine speed, wherein said second machine speed corresponds to a maximum delivered power, and wherein said terminal voltage and a phase current are in phase and a resistive component of the machine reactance is zero; and

controlling said machine speed to provide a substantially constant terminal voltage for a variable power demand level.

21. (new) A method for providing substantially constant-voltage power for an electric distribution system using a matched reactance power generation system as claimed in claim 20, further comprising the step of:

selecting said machine reactance value at said second speed from a vector diagram calculation for reactance including a machine terminal voltage vector and an internal machine voltage drop vector.

22. (new) A method for providing substantially constant-voltage power for an electric distribution system using a matched reactance power generation system as claimed in claim 20, wherein said machine inductance value is selected further based upon a machine reactance value and a frequency value.

23. (new) A method for providing substantially constant-voltage power for an electric distribution system using a matched reactance power generation system as claimed in claim 20 wherein said at least one permanent magnet is embedded in a rotor assembly of said permanent magnet rotor type machine.